

AMENDMENTS In the Claims

Current Status of Claims

- 1.(canceled)
- 2.(canceled)
- 3.(canceled)
- 4.(canceled)
- 5.(canceled)
- 6.(canceled)
- 7.(canceled)
- 8.(canceled)
- 9.(canceled)
- 10.(canceled)
- 11.(canceled)
- 12.(canceled)
- 13.(canceled)
- 14.(canceled)
- 15.(canceled)
- 16.(canceled)
- 17.(canceled)
- 18.(canceled)
- 19.(canceled)
- 20.(canceled)
- 21.(canceled)
- 22.(canceled)
- 23.(canceled)
- 24.(canceled)
- 25.(canceled)
- 26.(canceled)
- 27.(canceled)
- 28.(canceled)
- 29.(canceled)
- 30.(canceled)
- 31.(canceled)
- 32.(canceled)
- 33.(canceled)
- 34.(canceled)
- 35.(canceled)
- 36.(canceled)
- 37.(canceled)
- 38.(canceled)
- 39.(canceled)
- 40.(canceled)
- 41.(canceled)
- 42.(canceled)
- 43.(canceled)
- 44.(canceled)
- 45.(canceled)
- 46.(canceled)
- 47.(canceled)
- 48.(canceled)
- 49.(canceled)
- 50.(canceled)
- 51.(canceled)

52.(canceled)
53.(canceled)
54.(canceled)
55.(canceled)
56.(canceled)
57.(canceled)
58.(canceled)
59.(canceled)
60.(canceled)
61.(canceled)
62.(canceled)
63.(canceled)
64.(canceled)
65.(canceled)
66.(canceled)
67.(canceled)
68.(canceled)
69.(canceled)
70.(canceled)
71.(canceled)
72.(canceled)
73.(canceled)
74.(canceled)
75.(canceled)
76.(canceled)
77.(canceled)
78.(canceled)
79.(canceled)
80.(canceled)
81.(canceled)
82.(canceled)
83.(canceled)
84.(canceled)
84.(canceled)
85.(canceled)
86.(canceled)
87.(canceled)
88.(canceled)
89.(canceled)
90.(canceled)
91.(canceled)
92.(canceled)
93.(canceled)
94.(canceled)
95.(canceled)
96.(canceled)
97.(canceled)
98.(canceled)
99.(canceled)
100.(canceled)
101.(canceled)
102.(canceled)
103.(canceled)
104.(canceled)

105.(canceled)
106.(canceled)
107.(canceled)
108.(canceled)
109.(canceled)
110.(canceled)
111.(canceled)
112.(canceled)
113.(canceled)
114.(canceled)
115.(canceled)
116.(canceled)
117.(canceled)
118.(canceled)
119.(canceled)
120.(canceled)
121.(canceled)
122.(canceled)

123.(currently amended) A cross-laminate comprising:

a first coextruded film A having a film A main direction of uniaxial or unbalanced biaxial molecular orientation and including:

a continuous main layer comprising a first polymer material selected to have a high tensile strength,

a continuous bonding layer comprising a second polymer material and disposed on a first surface of the main layer, and

~~a plurality of arrays~~ an array of substantially parallel film A first strands coextruded on a top surface of the bonding layer in a spaced apart configuration, and comprising a third polymer material different from the first and second polymer materials, where a separation between adjacent ~~arrays~~ strands of film A ~~first strands is~~ array is between 2mm and 8 cm measured from a middle of one ~~array~~ strand to a middle of an adjacent ~~array~~ strand,

a second coextruded film B having a film B main direction of uniaxial or unbalanced biaxial molecular orientation and including:

a continuous main layer comprising a fourth polymer material selected to have a high tensile strength,

a continuous bonding layer comprising a fifth polymer material and disposed on a first surface of the main layer, and

~~a plurality of arrays~~ an array of substantially parallel film B first strands coextruded on a top surface of the bonding layer in a spaced apart configuration, and comprising a sixth polymer material different from the fourth and fifth polymer materials, where a separation between adjacent ~~arrays~~ strands of film B ~~first strands~~ array is between

2 mm and 8 cm measured from a middle of one array strand to a middle of an adjacent array strand,
where the film A and the film B are arranged such that the first surface of the film A faces the first surface of the film B and their bonding layers and arrays of strands on the first surfaces face each other and such that the film B main direction crosses the film A main direction and the arrays of the film B first strands cross the arrays of the film A first strands, a first bonding pattern formed between the first surface of the film A and the first surface of the film B comprising:
first bonds comprising spot-bonds formed directly between the film A first strands and the film B first strands, where the film A first strands intersect the film B first strands, second bonds comprising contact lines between the film A bonding layer and the film B first strands or the film B bonding layer and the film A first strands, and third bonds comprising contact regions between the film A bonding layer and the film B bonding layer, where the regions are devoid of the film A first strands and the film B first strands,
where the first bonds have a higher bond strength than a bond strength of the third bonds, and
where the strands have a thickness of no more than 30% of a thickness of their respective films at their thickest.

124.(currently amended) The cross-laminate according to claim 123, further comprising:
an exterior layer formed on an exterior surface of at least the film B comprising an exterior layer polymer material ~~adapted to~~ enhances a surface property of the laminate, where the property is selected from the group consisting of its heat-sealing capability and its frictional property.

125.(previously presented) The cross-laminate according to claim 123, wherein the second bonds have a bond strength greater than the bond strength of the third bonds.

126.(canceled)
127.(canceled)

128.(previously presented) The cross-laminate according to claim 123, wherein a collective area of the film A first strands and the film B first strands comprises no more than 60% of a surface area of their respective film sides.

129.(previously presented) The cross-laminate according to claim 123, wherein a thickness increase of the films A and B at their respective strand locations is at most 20% of a film thickness of the films A and B in adjacent regions of the films A and B devoid of their respective strands.

1 130.(previously presented) The cross-laminate according to claim 123, wherein a thickness
2 increase of the films A and B at their respective strand locations is at most 10% of a film thickness
3 of the films A and B in adjacent regions of the films A and B devoid of their respective strands.

1 131.(previously presented) The cross-laminate according to claim 123, wherein a volume of the
2 film A strands and the film B strands is not greater than 15% of a volume of their respective films.

1 132.(previously presented) The cross-laminate according to claim 123, wherein a volume of the
2 film A strands and the film B strands is not greater than 10% of a volume of their respective films.

1 133.(previously presented) The cross-laminate according to claim 123, wherein a volume of the
2 film A strands and the film B strands is not greater than 5% of a volume of their respective films.

1 134.(previously presented) The cross-laminate according to claim 123, wherein the separation is
2 between 2 mm and 40 mm.

1 135.(previously presented) The cross-laminate according to claim 123, wherein the separation is
2 at the highest 20 mm.

1 136.(previously presented) The cross-laminate according to claim 123, wherein:
2 the bond strength of the first bonds is at least 40 g cm⁻¹, as measured by a peel test carried
3 out on narrow specimens of the cross-laminate at a velocity of about 1 mm sec⁻¹, and
4 the bond strength of the third bonds are less than or equal to 75% of the bond strength of the
5 first bonds, as measured by the peel test.

1 137.(previously presented) The cross-laminate according to claim 136, wherein the bond strength
2 of the third bonds are less than or equal to 50% of the bond strength of the first bonds, as measured
3 by the peel test.

1 138.(previously presented) The cross-laminate according to claim 123, wherein an average
2 melting point of the third polymer material and average melting point of the sixth polymer materials
3 are at least about 10°C lower than an average melting point of the first polymer material and an
4 average melting point of the fourth polymer material.

1 139.(previously presented) The cross-laminate according to claim 123, wherein an average

melting point of the third polymer material and average melting point of the sixth polymer materials are at least about 15°C lower than an average melting point of the first polymer material and an average melting point of the fourth polymer material.

140.(previously presented) The cross-laminate according to claim 123, wherein an average melting point of the third polymer material and average melting point of the sixth polymer materials are at least about 20°C lower than an average melting point of the first polymer material and an average melting point of the fourth polymer material.

141.(previously presented) The cross-laminate according to claim 123, wherein the main layer of each of the two films A and B consists essentially of polyethylene or polypropylene.

142.(previously presented) The cross-laminate according to claim 123, wherein:
the main layers are selected from the group consisting of HDPE, LLDPE or a blend of the two, and
the bonding layers comprise LLDPE in admixture with 5 - 25% of a copolymer of ethylene having a melting point or a melting range within the temperature range of 50 - 80°C.

143.(currently amended) The cross-laminate according to claim 123, wherein the bonding layers include an adhesion modifying material ~~adapted to that~~ establishes a blocking of the contacting mutually facing surfaces of the films A and B to each other in regions devoid the their strands.

144.(previously presented) The cross-laminate according to claim 123, wherein:
at least one of the films A and B ~~further including a plurality of~~ includes at least one further array of substantially parallel second strands,
where the second strands comprise a polymer material differing in composition, color and/or appearance from the first strands and
where the arrays of first and second strands on the film A or film B are interspersed.

145.(previously presented) The cross-laminate according to claim 123, wherein the polymer material of the strands of at least one of the films A and B includes a colored material that makes the colored strands visible through at least one side of the cross-laminate.

146.(previously presented) The cross-laminate according to claim 145, wherein the cross-laminate has a thickness at its highest of about 0.3 mm, and:
wherein an exterior surface of the film A is corrugated to form a visible pattern of striations

1 extending in one direction,
2 where a spacing of the striations being at most about 3 mm,
3 the main layer and the bonding layer of the film A are substantially transparent to enable the
4 colored strands to be visible when the laminate is observed from one of the exterior surfaces of the
5 cross-laminate, and
6 a depth of the corrugations is sufficient to impart a three-dimensional effect to the cross-
7 laminate such that the strands appear to be spaced internally from the exterior surface of the film A
8 a distance substantially greater than an actual maximum thickness of the film A.

1 147.(previously presented) The cross-laminate according to claim 123, wherein the film A further
2 includes:

3 a second continuous bonding layer comprising an seventh polymer material and
4 disposed on a second surface of the main layer, and
5 ~~a plurality of arrays~~ an array of substantially parallel film A third strands coextruded
6 on a top surface of the second bonding layer in a spaced apart configuration and
7 comprising an eighth polymer material different from the first polymer material and
8 seventh polymer material, and

9 the cross-laminate further comprising:

10 a third film C having a main direction of uniaxial or unbalanced biaxial molecular
11 orientation and including:

12 a continuous main layer comprising a ninth polymer material having a high
13 tensile strength,

14 a continuous bonding layer comprising a tenth polymer material and disposed
15 on a first surface of the main layer, and

16 ~~a plurality of arrays~~ an array of substantially parallel film C first strands
17 disposed on a top surface of the bonding layer in a spaced apart configuration
18 and comprising an eleventh polymer material different from the ninth and
19 tenth polymer materials,

20 where the film A and the film C are arranged such that the second surface of the film A faces
21 the first surface of the film C and the second bonding layers of the film A and the bonding
22 layer of film C and the arrays of third strands of the film A and the arrays of strands of the
23 film C face each other and such that the film C main direction crosses the film A main
24 direction and the film C first strands cross the film A third stands,

25 a second bonding pattern formed between the second surface of the film A and first surface
26 of the film C comprising:

27 fourth bonds comprising spot-bonds formed directly between the film A third strands

1 and the film C first strands, where the film A first strands intersect the film C first strands,
2 fifth bonds comprising contact lines between the film A bonding layer and the film
3 C first strands or the film C bonding layer and the film A third strands, and
4 sixth bonds comprising contact regions between the film A bonding layer and the film
5 C bonding layer, where the regions are devoid of the film A third strands and the film C first
6 strands,
7 where the fourth bonds have a higher bond strength than the sixth bonds.

1 148.(currently amended) The cross-laminate according to claim 147, further comprising:
2 an exterior layer formed on an exterior surface of at least the film B or the film C comprising
3 a polymer material ~~adapted to~~ that enhances a surface property of the laminate, where the property
4 is selected from the group consisting of its heat-sealing capability and its frictional property.

149.(canceled)

150.(canceled)

151.(canceled)